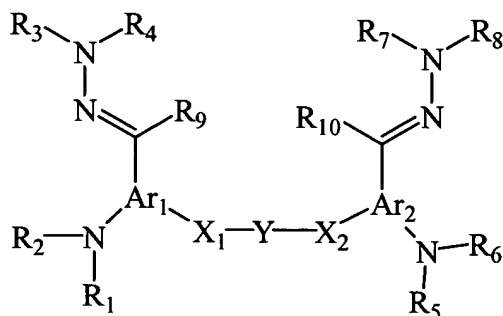


CLAIMS

What is claimed is:

1. An organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

(a) a charge transport material having the formula:



where R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈, are, each independently, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

R₉ and R₁₀ are, each independently, H, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

Ar₁ and Ar₂ are, each independently, an aromatic group;

Y comprises an arylamine group; and

X₁ and X₂ comprise, each independently, a -(CH₂)_m-N(R₁₁)-N=C(R₁₂)- group, where R₁₁ and R₁₂ are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group, m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a, R_b, R_c, R_d, R_e, and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, an alkynyl group, a heterocyclic group, an aromatic group, or a part of a ring group; and

(b) a charge generating compound.

2. An organophotoreceptor according to claim 1 wherein Y comprises a carbazole group, a julolidine group, or an (N,N-disubstituted)arylamine group.

3. An organophotoreceptor according to claim 1 wherein X and X' are, each independently, a $-Q_1-CH_2-CH(Q_2H)-CH_2-N(R)-N=C(R')-$ group where Q_1 and Q_2 are, each independently, O, S or NR'' , and R, R', and R'' are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, or an aromatic group.

4. An organophotoreceptor according to claim 1 wherein Ar_1 and Ar_2 are, each independently, an aromatic C_6H_3 group.

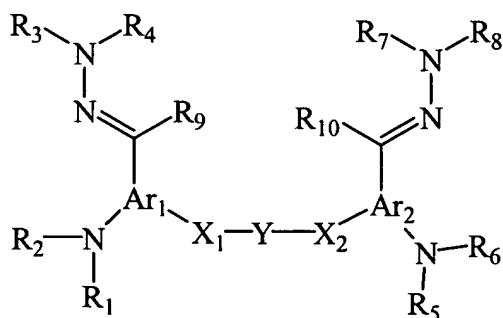
5. An organophotoreceptor according to claim 1 wherein the photoconductive element further comprises a second charge transport material.

6. An organophotoreceptor according to claim 5 wherein the second charge transport material comprises an electron transport compound.

7. An organophotoreceptor according to claim 1 wherein the photoconductive element further comprises a binder.

8. An electrophotographic imaging apparatus comprising:
 (a) a light imaging component; and
 (b) an organophotoreceptor oriented to receive light from the light imaging component, the organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

(i) a charge transport material having the formula



where $R_1, R_2, R_3, R_4, R_5, R_6, R_7$, and R_8 , are, each independently, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

R_9 and R_{10} are, each independently, H, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

5 Ar_1 and Ar_2 are, each independently, an aromatic group;

Y comprises an arylamine group; and

X_1 and X_2 comprise, each independently, a $-(CH_2)_m-N(R_{11})-N=C(R_{12})-$ group, where R_{11} and R_{12} are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group, m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a, R_b, R_c, R_d, R_e , and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, an alkynyl group, a heterocyclic group, an aromatic group, or a part of a ring group; and

(ii) a charge generating compound.

9. An electrophotographic imaging apparatus according to claim 8 wherein Y comprises a carbazole group, a julolidine group, or an (N,N-disubstituted)arylamine group.

10. An electrophotographic imaging apparatus according to claim 8 wherein X and X' are, each independently, a $-Q_1-CH_2-CH(Q_2H)-CH_2-N(R)-N=C(R')-$ group where Q_1 and Q_2 are, each independently, O, S or NR'' , and R, R' , and R'' are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, or an aromatic group.

11. An electrophotographic imaging apparatus according to claim 8 wherein Ar_1 and Ar_2 are, each independently, an aromatic C_6H_3 group.

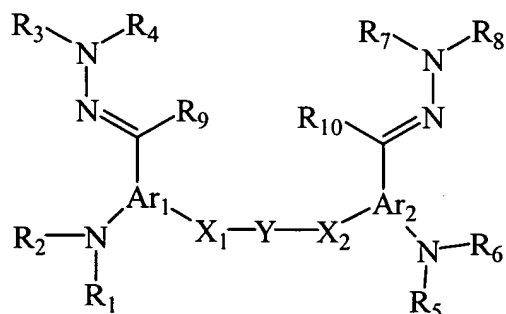
12. An electrophotographic imaging apparatus according to claim 8 wherein the photoconductive element further comprises a second charge transport material.

13. An electrophotographic imaging apparatus according to claim 12 wherein
5 second charge transport material comprises an electron transport compound.

14. An electrophotographic imaging apparatus according to claim 8 further comprising a toner dispenser.

10 15. An electrophotographic imaging process comprising;
(a) applying an electrical charge to a surface of an organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising

(i) a charge transport material having the formula



15 where R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈, are, each independently, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

R₉ and R₁₀ are, each independently, H, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

20 Ar₁ and Ar₂ are, each independently, an aromatic group;

Y comprises an arylamine group; and

X₁ and X₂ comprise, each independently, a -(CH₂)_m-N(R₁₁)-N=C(R₁₂)- group, where R₁₁ and R₁₂ are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group, m is an integer between 1 and
25 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b

group, a CR_cR_d group, or a SiR_eR_f where R_a , R_b , R_c , R_d , R_e , and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, an alkynyl group, a heterocyclic group, an aromatic group, or a part of a ring group; and

5 (ii) a charge generating compound.

(b) imagewise exposing the surface of the organophotoreceptor to radiation to dissipate charge in selected areas and thereby form a pattern of charged and uncharged areas on the surface;

(c) contacting the surface with a toner to create a toned image; and

10 (d) transferring the toned image to substrate.

16. An electrophotographic imaging process according to claim 15 wherein Y comprises a carbazole group, a julolidine group, or an (N,N-disubstituted)arylamine group.

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17. An electrophotographic imaging process according to claim 15 wherein X and X' are, each independently, a $-\text{Q}_1-\text{CH}_2-\text{CH}(\text{Q}_2\text{H})-\text{CH}_2-\text{N}(\text{R})-\text{N}=\text{C}(\text{R}')$ - group where Q_1 and Q_2 are, each independently, O, S or NR'' , and R, R', and R'' are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, or an aromatic group; and Y is a carbazole group.

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18. An electrophotographic imaging process according to claim 15 wherein Ar_1 and Ar_2 are, each independently, an aromatic C_6H_3 group.

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19. An electrophotographic imaging process according to claim 15 wherein the photoconductive element further comprises a second charge transport material.

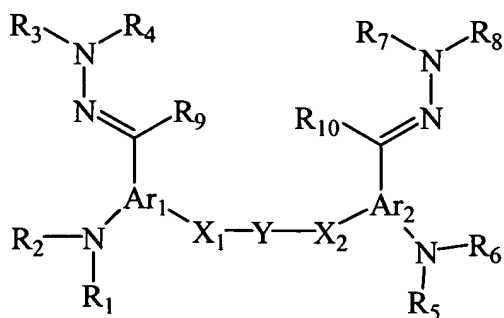
20. An electrophotographic imaging process according to claim 19 wherein the second charge transport material comprises an electron transport compound.

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21. An electrophotographic imaging process according to claim 15 wherein the photoconductive element further comprises a binder.

22. An electrophotographic imaging process according to claim 15 wherein the toner comprises colorant particles.

23. A charge transport material having the formula



where R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈, are, each independently, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

R₉ and R₁₀ are, each independently, H, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group;

Ar₁ and Ar₂ are, each independently, an aromatic group;

Y comprises an arylamine group; and

X₁ and X₂ comprise, each independently, a $-(CH_2)_m-N(R_{11})-N=C(R_{12})-$ group, where R₁₁ and R₁₂ are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or a heterocyclic group, m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a, R_b, R_c, R_d, R_e, and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, an alkynyl group, a heterocyclic group, an aromatic group, or a part of a ring group.

24. A charge transport material according to claim 23 wherein Y comprises a carbazole group, a julolidine group, or an (N,N-disubstituted)arylamine group.

25. A charge transport material according to claim 23 wherein X and X' are, each independently, a $-Q_1-CH_2-CH(Q_2H)-CH_2-N(R)-N=C(R')-$ group where Q_1 and Q_2 are, each independently, O, S or NR'' , and R, R', and R'' are, each independently, hydrogen, an alkyl group, an alkenyl group, an alkynyl group, or an aromatic group; and Y is a carbazole group.

26. A charge transport material according to claim 25 wherein Q_1 and Q_2 are each independently O; and R is a phenyl group.

27. A charge transport material according to claim 23 wherein Ar_1 and Ar_2 are, each independently, an aromatic C_6H_3 group.